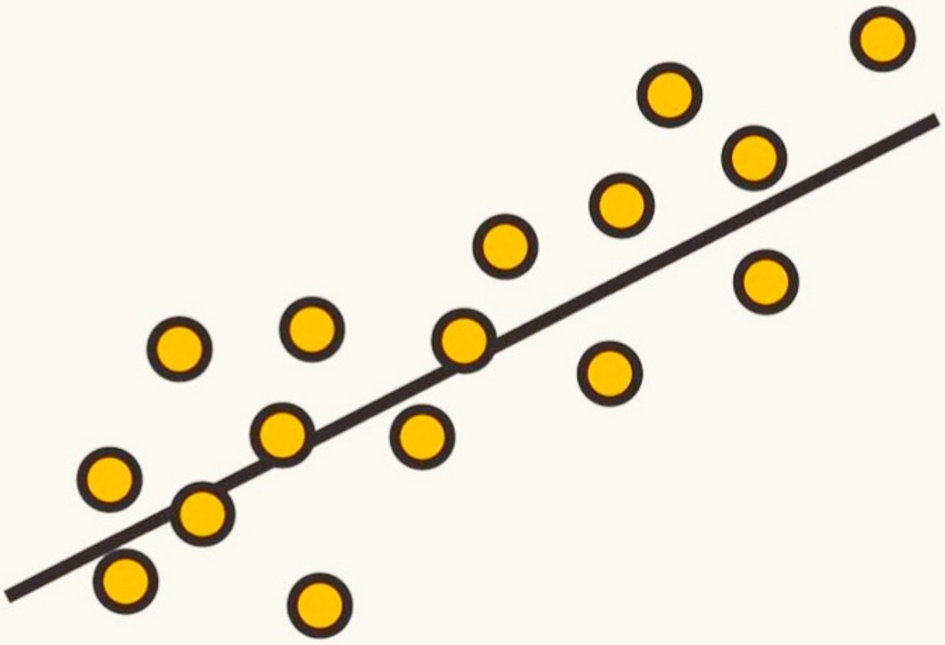
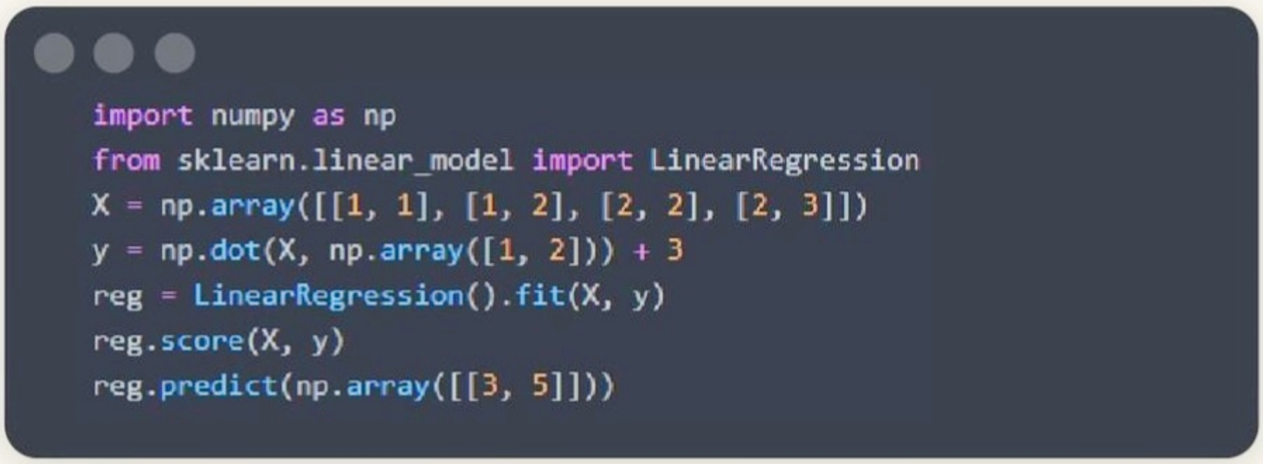
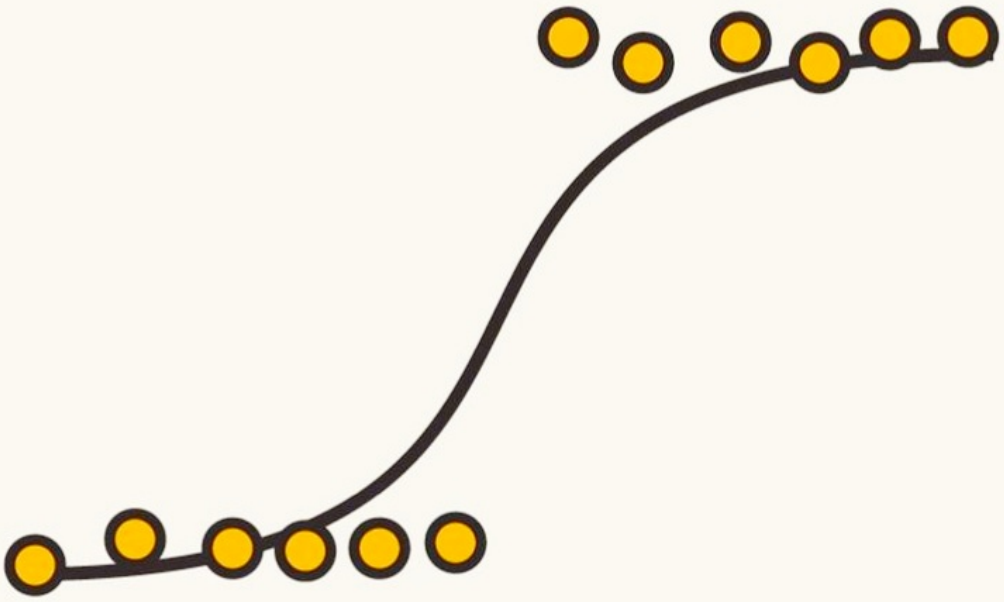
SKLEARN CHEATSHEET

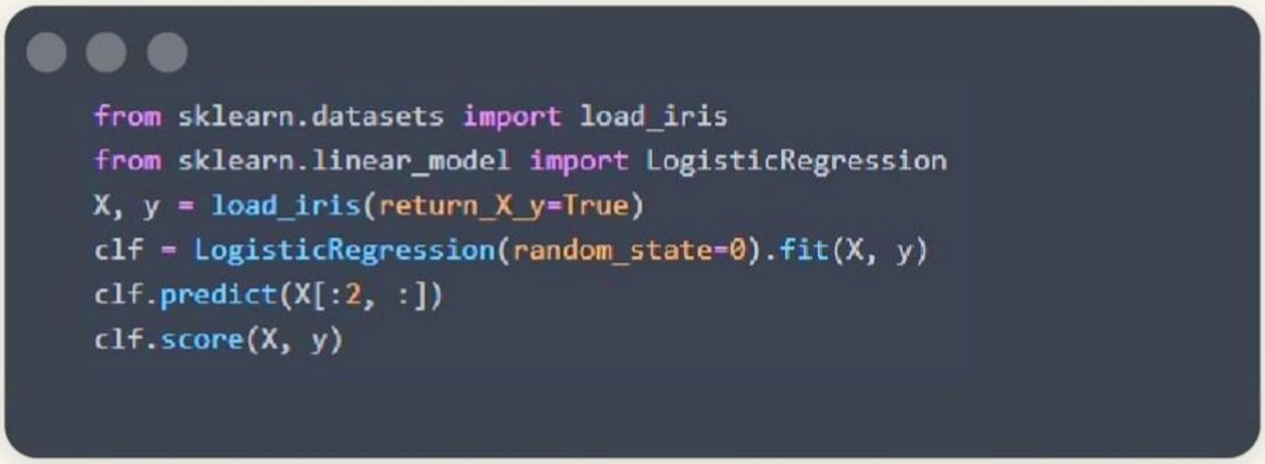




```
import numpy as np
from sklearn.linear_model import LinearRegression
X = np.array([[1, 1], [1, 2], [2, 2], [2, 3]])
y = np.dot(X, np.array([1, 2])) + 3
reg = LinearRegression().fit(X, y)
reg.score(X, y)
reg.predict(np.array([[3, 5]]))
```

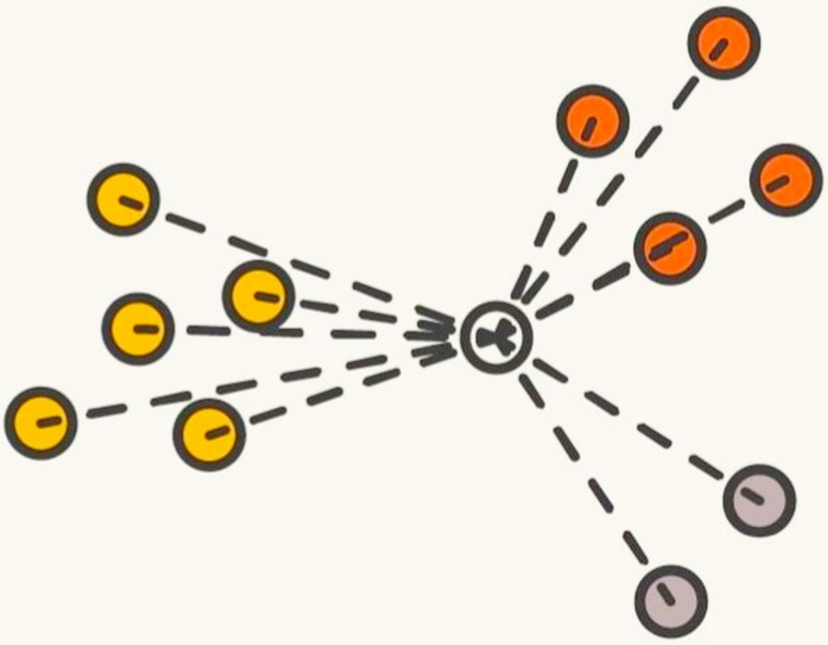
Linear Regression

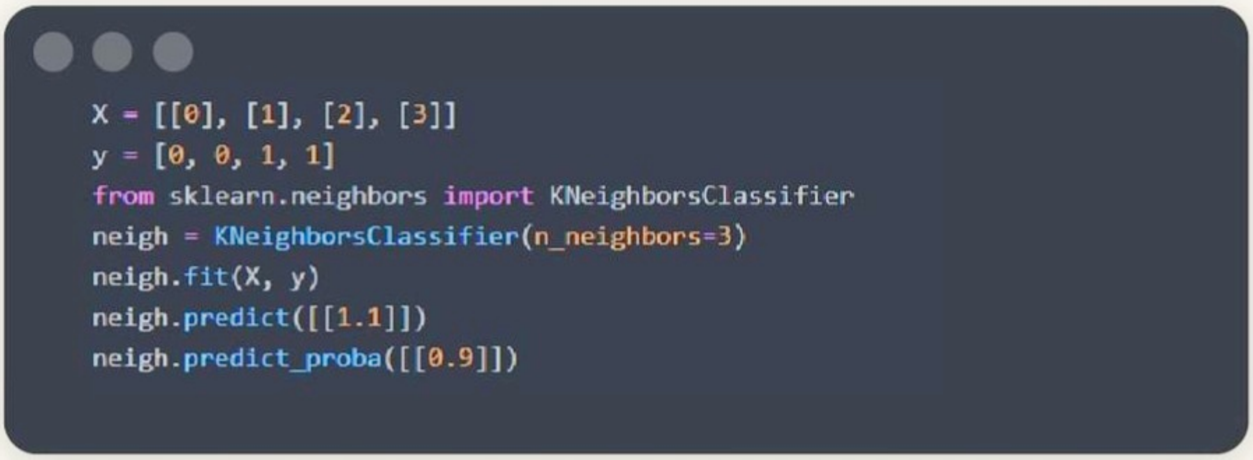




```
from sklearn.datasets import load_iris
from sklearn.linear_model import LogisticRegression
X, y = load_iris(return_X_y=True)
clf = LogisticRegression(random_state=0).fit(X, y)
clf.predict(X[:2, :])
clf.score(X, y)
```

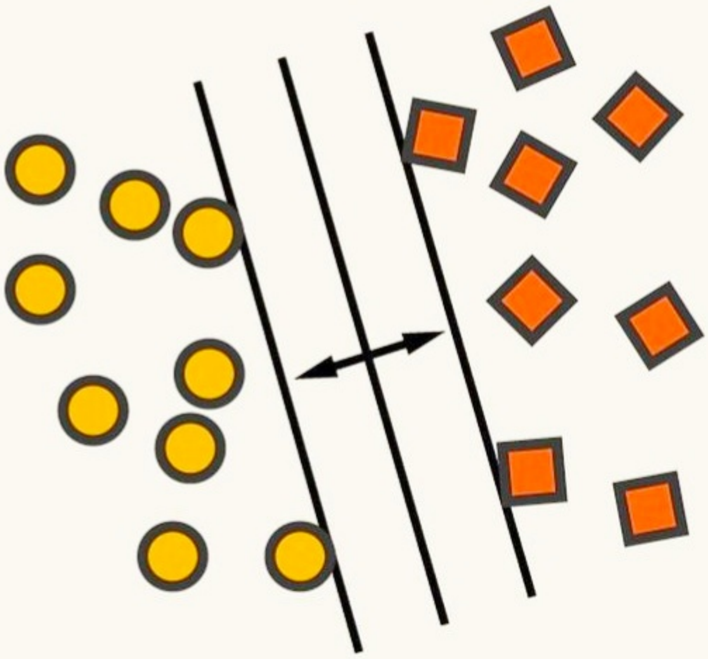
Logistic Regression

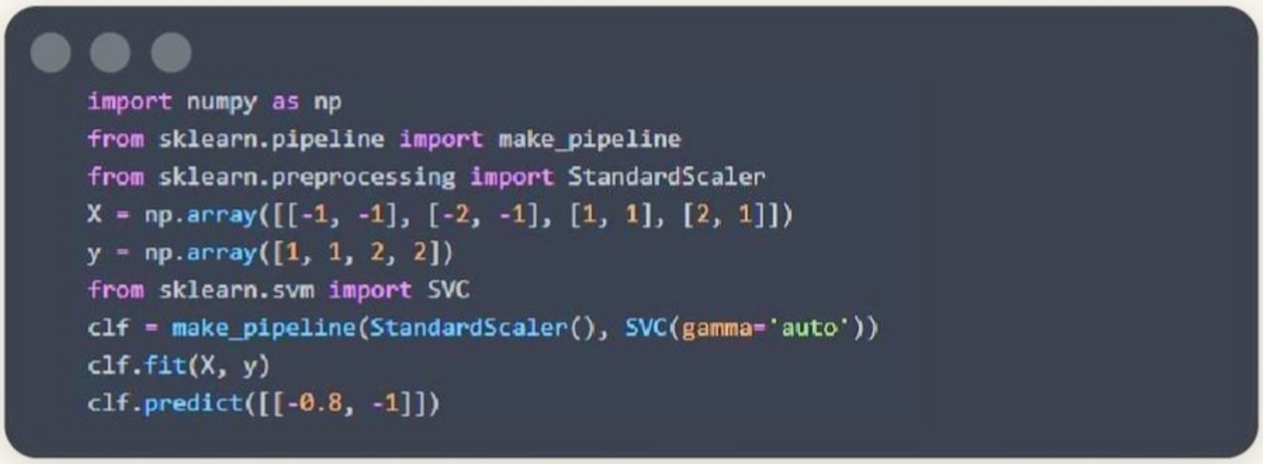




```
X = [[0], [1], [2], [3]]
y = [0, 0, 1, 1]
from sklearn.neighbors import KNeighborsClassifier
neigh = KNeighborsClassifier(n_neighbors=3)
neigh.fit(X, y)
neigh.predict([[1.1]])
neigh.predict_proba([[0.9]])
```

KNN

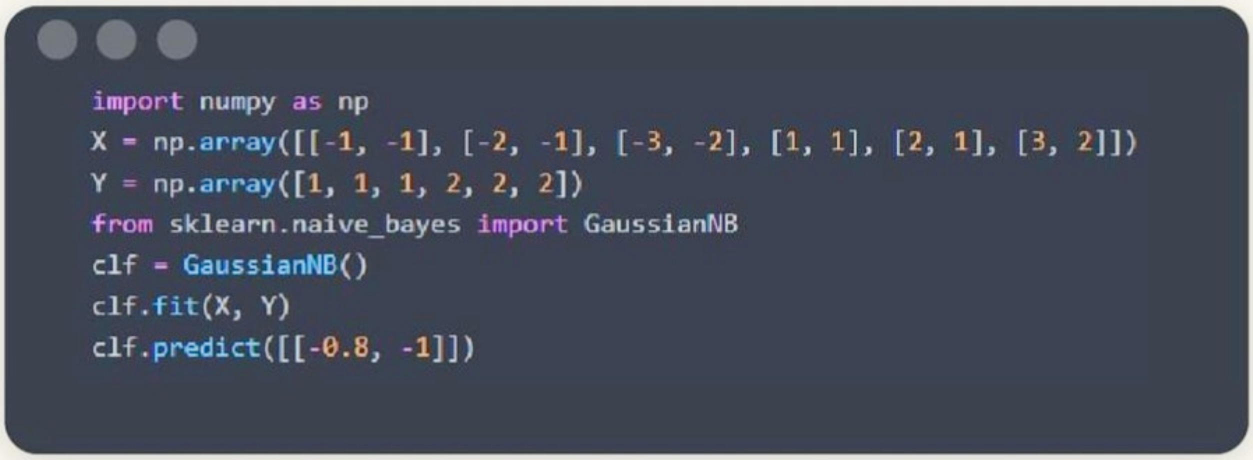




```
import numpy as np
from sklearn.pipeline import make_pipeline
from sklearn.preprocessing import StandardScaler
X = np.array([[-1, -1], [-2, -1], [1, 1], [2, 1]])
y = np.array([1, 1, 2, 2])
from sklearn.svm import SVC
clf = make_pipeline(StandardScaler(), SVC(gamma='auto'))
clf.fit(X, y)
clf.predict([[-0.8, -1]])
```

SVM

$$P(x|y) = P(x_1|y) \cdot P(x_2|y) \cdot \ \ldots \ \cdot P(x_d|y)$$



```python
import numpy as np
X = np.array([[-1, -1], [-2, -1], [-3, -2], [1, 1], [2, 1], [3, 2]])
Y = np.array([1, 1, 1, 2, 2, 2])
from sklearn.naive_bayes import GaussianNB
clf = GaussianNB()
clf.fit(X, Y)
clf.predict([[-0.8, -1]])
```

Naive Bayes